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VOICE ENABLED ONLINE HOSPITAL MANAGEMENT SYSTEM

Internet Web Programming
Project Report

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Under the guidance of
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SCOPE.

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At last, I would like to appreciate the efforts of my teammates who made the project possible.

ABSTRACT

This project aims to develop a software named “Hospital Management System” which allows the patient to interact with the doctor through the software. The project deals with three different modules:

Admin, Doctor and the patient.

The Admin is the administrator who overviews and manages all the activities of the hospital. The Admin can create a new Admin and add a new doctor. The Admin can view all the doctor details and staff details. However, the Admin can view only his/her own details under “My profile” and not the details of all other Admins. The Admin can log into his/her account the admin using the userid and password.

The Patient can view all the doctors and even search for a doctor. The Patient can book or cancel an appointment. The patient can view appointments taken.

The patient can generate receipts of the appointments. The patients can view his/her details under “My profile”.

The doctor can view the appointments and delete them. He can submit a prescription and check the patient history using patient username.

TABLE OF CONTENTS

1 INTRODUCTION

1.1 Project Title
1.2 Purpose
1.3 System Scope

2 FUNCTIONAL REQUIREMENTS

2.1 Product perspective

2.2Product Features

2.3 User Characteristics

2.4 Assumption & Dependencies

2.5 User Requirements and Product Specific System Requirements

2.5.1 Account Creation
2.5.2 Logging In
2.5.3 Update Password
2.5.4 Get Appointment
2.5.5 Submit Prescription

3 SYSTEM REQUIREMENTS

3.1 System Interface
3.2 User Interface
3.3 Communication Interface
3.4 H/W Requirements
3.5 S/W Requirements

4 USE CASE

5 ER DIAGRAM

6 DATABASE DESIGN

7 DATA FLOW DIAGRAM

7.1 0-Level DFD

7.2 1-Level DFD

7.2.1 Patient

7.2.2 Admin

7.2.3 Doctor

8 SCREEN DESIGN

8.1 Patient

8.2 Doctor

8.3 Admin

9 TESTING

10 FUTURE SCOPE

11 CONCLUSIONS

12 REFERENCES

1 INTRODUCTION

1.1 Project Title

VOICE ENABLED HOSPITAL MANAGEMENT SYSTEM

1.2 Purpose

The purpose of the project is to let the patients to interact with doctors from anywhere, either by typing or else, with the help of their speech. The patients should be able to get their appointment to the required doctors on their own. Also, their must be some kind of transparency. The patients should be able to see how much money has been paid and for what reasons. Also, they can generate receipts whenever they need.

The whole project makes it much easier for the administrator to manage the whole Hospital without any mess.

Hospital Management system is used for the following purposes:

- To be able for automation of hospital.
- To reduce the workload of staffs.
- To get faster retrieval of information about the desired doctor and staff for the admin.
- To provide facility to reduce paper work and provide data security.
- The patient can search for a doctor and book appointments on their own
- Transparency in the system.

1.3 System Scope

Voice Enabled Hospital Management system is a web application that automates the functions of a hospital and makes it more user friendly by adding a voice feature.

Scope of this document is to satisfy the requirements, clearly identifying the information needed by the user, the source of the information and outputs expected from the system.

2 FUNCTIONAL REQUIREMENTS

2.1 Product Perspective

Voice Enabled Hospital Management system is a web application that is intended for automating a hospital in an organization. The user of the product can be either an admin or a doctor or a patient.

The admin overviews and manages all the activities and generates reports. The admin can create a new admin and add a new doctor.

The doctor can view all the appointments scheduled and delete already attended appointments. The doctor can submit prescriptions if needed

The patient can book or cancel an appointment. The patient ca view money spent and generate prescription.

2.2 Product features

Admin

ID	Origin	Shall Requirement
1	security	The admin SHALL be able to log into an account with his username and password.
2	View doctor details	The user SHALL be able to view all the details of all the doctor
3	View staff details	The user SHALL be able to view all the details of all the staff
4	Create new doctor	The user can add new doctor to the system.
5	Control all the bed details	The user can add, edit and delete the bed

Doctor

ID	Origin	Shall Requirement
1	security	The doctor SHALL be able to log into an account with his username and password.

ID	Origin	Shall Requirement
2	View patient history	The user SHALL be able to view patient history using his/her userid
3	Generate and submit prescription	The user SHALL be able to generate prescription for a particular patient.
4	View appointment	The user can view and delete appointment

Patient

ID	Origin	Shall Requirement
1	security	The patient SHALL be able to log into an account with his username and password.
2	View doctors	The user SHALL be able view list of all doctors and even search for them using the keyboard or their voice
3	Get appointment	The user SHALL be able to get appointment and even cancel them.
4	Create new account	The user can create new account by providing all the details
5	View money spent	The user can view prescription submitted for the patient and amount spent on each. Also the patient can generate the receipt

2.3 User characteristics

The following table describes various users associated with our project. The requirements gathered from the users helped us define different functionalities of the software.

USERS	DESCRIPTION
Admin	The admin overviews the entire system and generates reports.
Patient	Interact with doctors when necessary. Get appointments and cancel them.
Doctor	Responsible for viewing the appointments scheduled and delete them when they have been attended. Can create prescription for patients and submit them.
System	The system is responsible for secure storage of all the user data.

2.4 Assumption & Dependencies

The following table lists the assumptions made by the requirements that define the Cloud management system.

Assumption	Description
Secure connection	The defined requirements assume that there is there is a secure connection.

Dependent Modules

The following modules are dependent on one another for their functioning:

- Book appointment: The patient books appointment for a particular doctor.
- View appointment: The patient as well as doctor can view appointment after they have been booked.

- Submit prescription: The doctor submits prescription.
- View money receipts: After doctor submits prescription, the patient can generate money receipts.

3 System Requirements

3.1 System Interface

The system is to be developed in J2EE environment in JSP, Servlet and JDBC.

3.2 User Interface

The client interacts with the system using the HTML/JSP pages.

3.3 Communication Interface

The communication between the front-end and the back-end is through JDBC.

3.4 H/W Requirements

Laptop

3.5 S/W Requirements

Windows7

MySQL

Tomcat 6.x or above

Eclipse

Internet connectivity for the API service

4 Database Design

- Admin

#	Name	Type	Collation	Attributes	Null
1	name	varchar(50)			No
2	gender	varchar(10)			No
3	phn_no	int(10)			No
4	username	varchar(30)			No
5	password	varchar(30)			No

- Appointment

#	Name	Type	Collation	Attributes	Null
1	Doctor_id	varchar(30)			No
2	username	varchar(30)			No
3	time	varchar(30)			No
4	day	varchar(30)			No
5	id	int(10)			No

- Bedavailability

#	Name	Type	Collation	Attributes	Null
1	bedNo	int(10)			No
2	category	varchar(30)			No
3	roomNo	int(10)			No
4	username	varchar(30)			Yes

- Viewdepartment

#	Name	Type	Collation	Attributes	Null
1	name	varchar(30)			No
2	gender	varchar(20)			No
3	phn_no	int(20)			No
4	department	varchar(20)			No

- Doctor_details

#	Name	Type	Collation	Attributes	Null
1	Doctor_Id	varchar(30)			No
2	First_Name	varchar(40)			No
3	Age	int(5)			No
4	Gender	varchar(10)			No
5	Address	varchar(50)			No
6	Visit_Timing	varchar(20)			Yes
7	Second_Name	varchar(10)			No
8	Blood_Group	varchar(10)			No
9	Phone_No	int(20)			No
10	City	varchar(20)			No
11	Days	varchar(40)			No
12	Password	varchar(20)			No
13	department	varchar(30)			Yes

- Patient

#	Name	Type	Collation	Attributes	Null
1	name	varchar(50)			No
2	gender	varchar(10)			No
3	phn_no	int(10)			No
4	username	varchar(30)			No
5	password	varchar(30)			No

- Report

#	Name	Type	Collation	Attributes	Null
1	username	varchar(30)			No
2	Doctor_Id	varchar(30)			No
3	Disease	varchar(30)			No
4	medicines	varchar(30)			No
5	cost	int(30)			No
6	id	int(10)			No

- Staffview

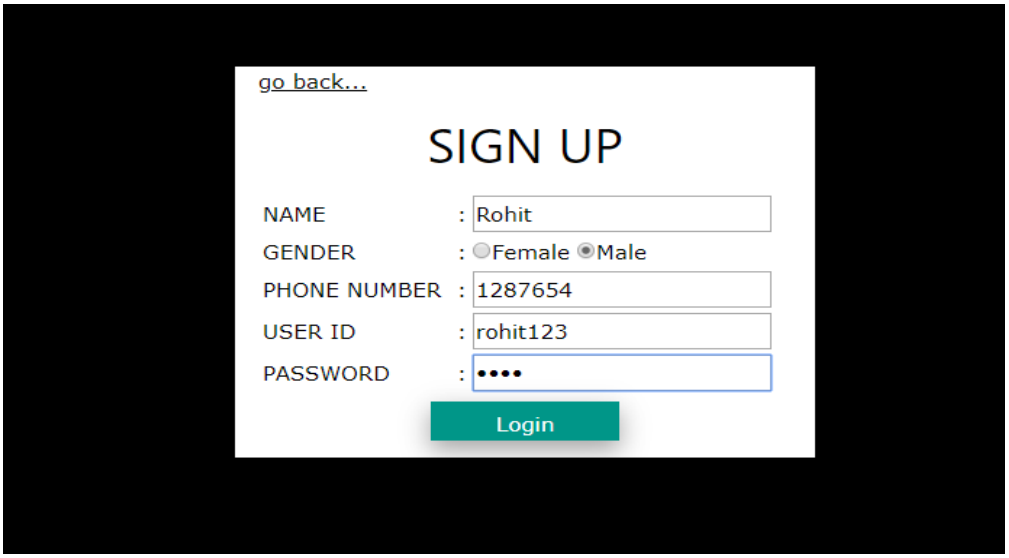
#	Name	Type	Collation	Attributes	Null
1	name	varchar(30)			No
2	gender	varchar(20)			No
3	phn_no	int(30)			No
4	staff_id	varchar(20)			No
5	designation	varchar(30)			No

5 Screen Design

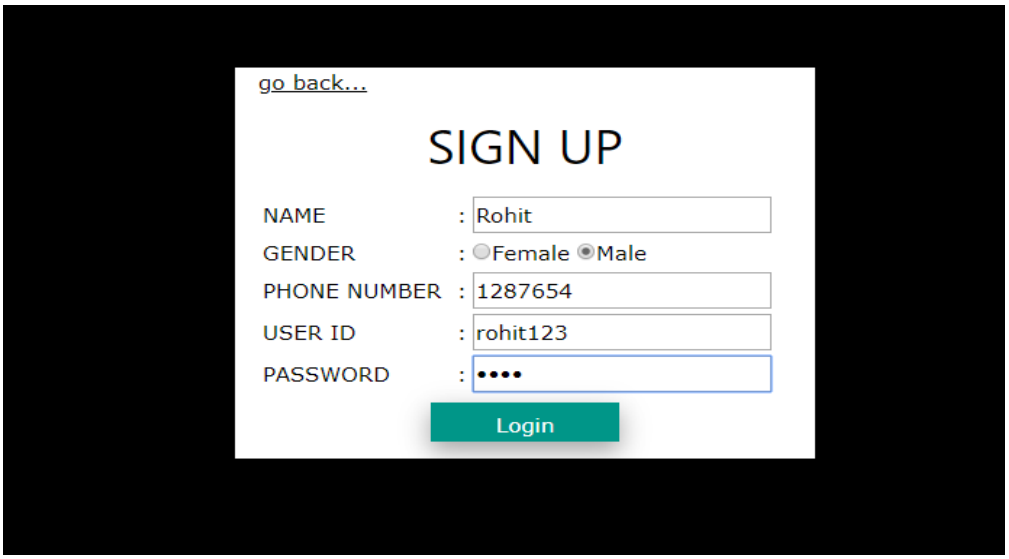
- Home page

5.1 Patient

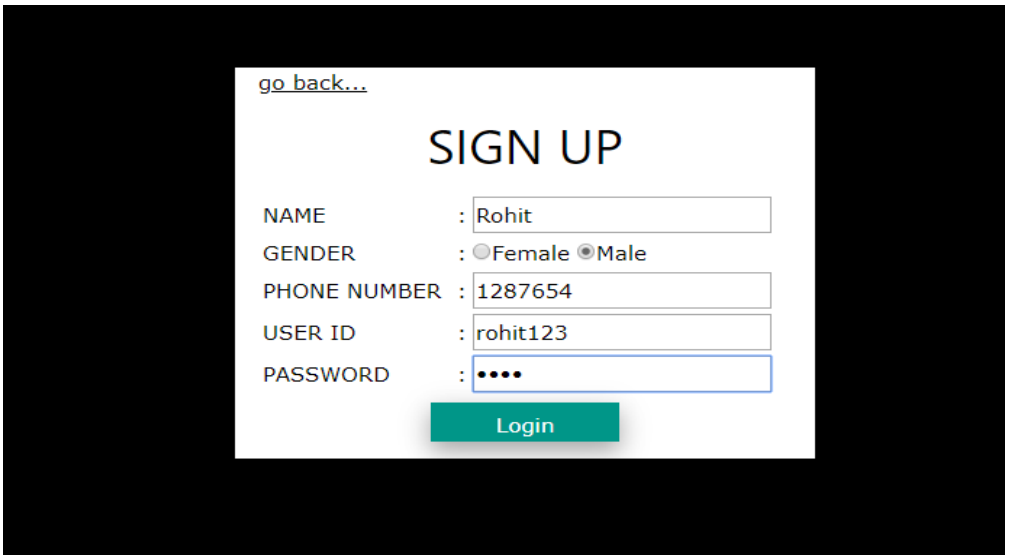
- Creation of account

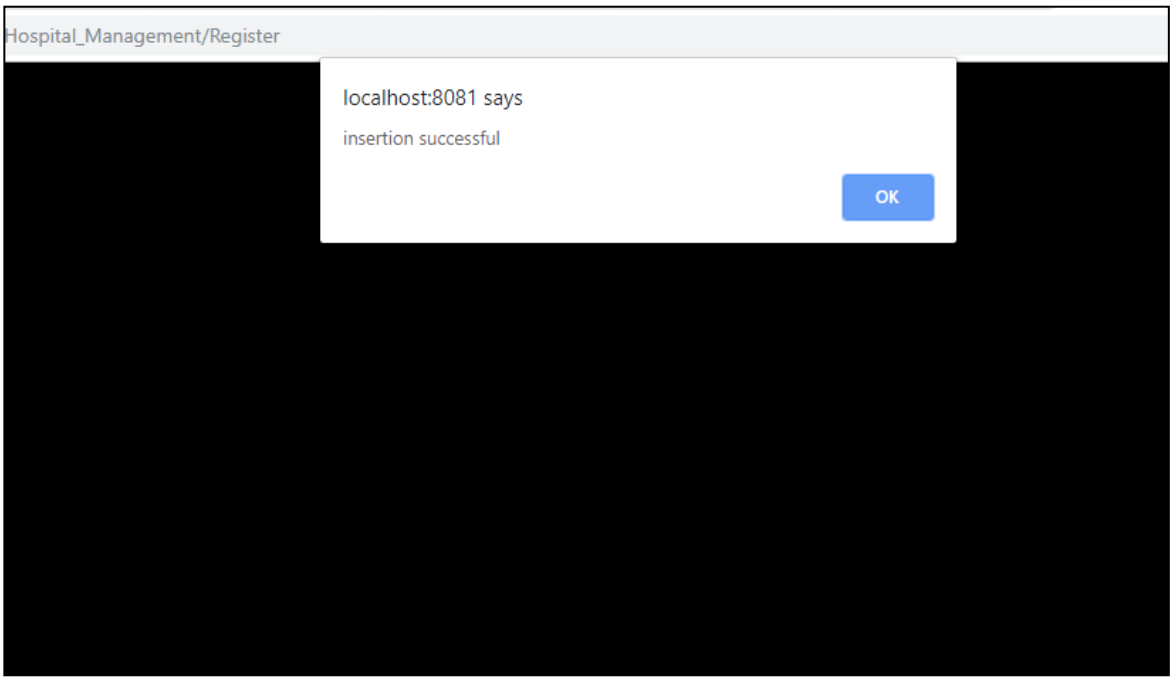


- Creation of account



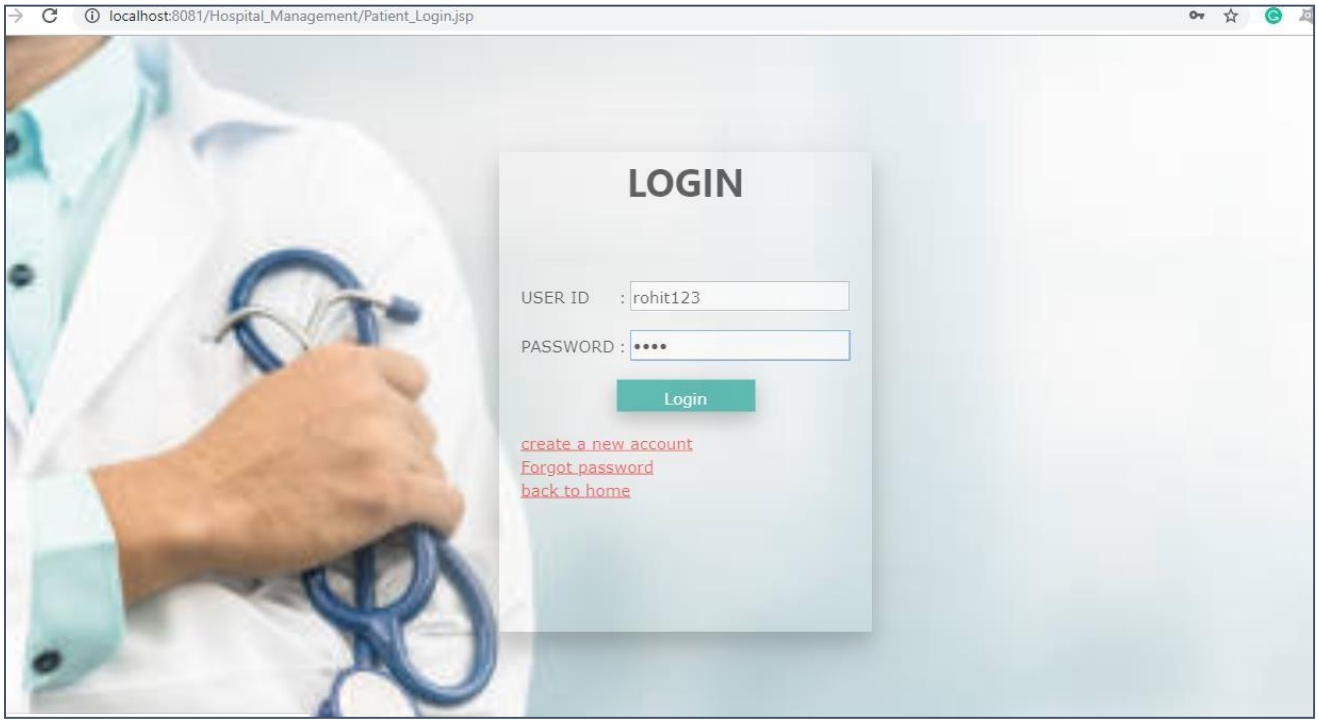
- Creation of account





The patient can create an account to access functionalities. Once an account is created, the user can log into the account, using the username and password. The details entered in this page is securely stored in database.

- Log in

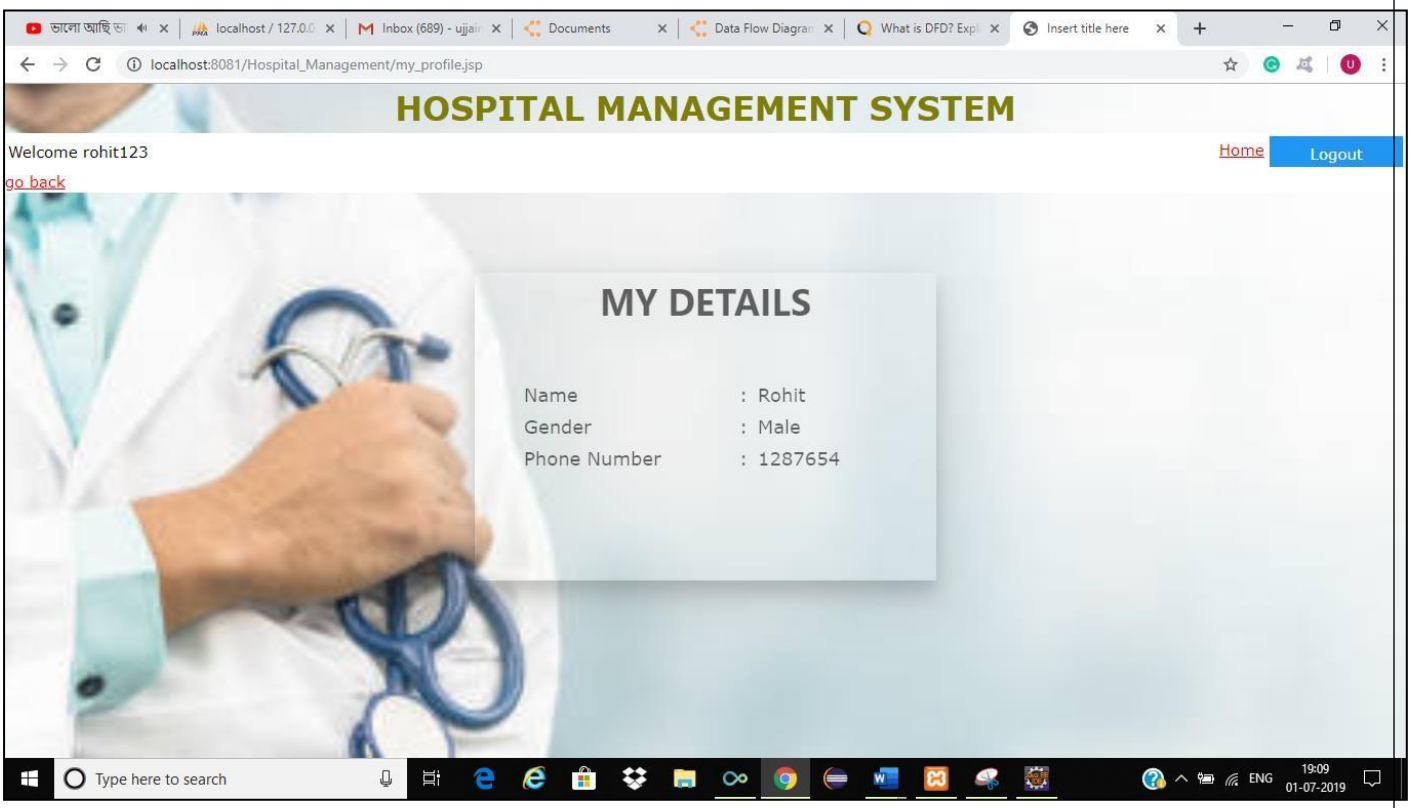


Anyone can log into his/her own account using username and password. If the combination of username and password is present in

database in patient table, then he/she is redirected to the homepage. Else, an error message is shown.

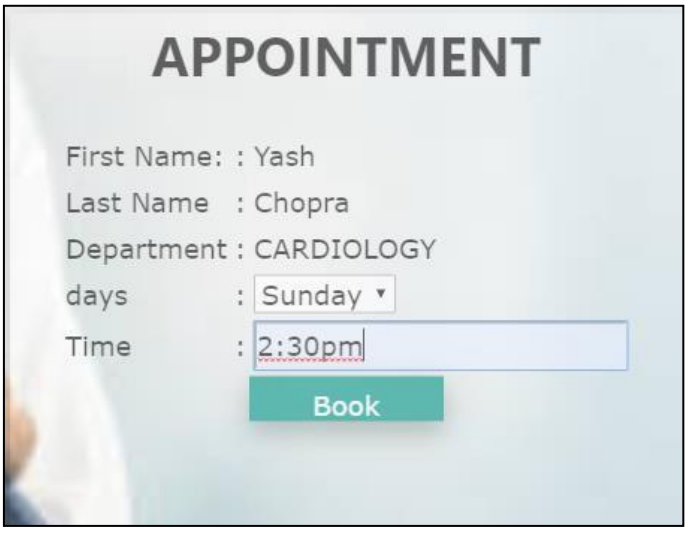
- My profile

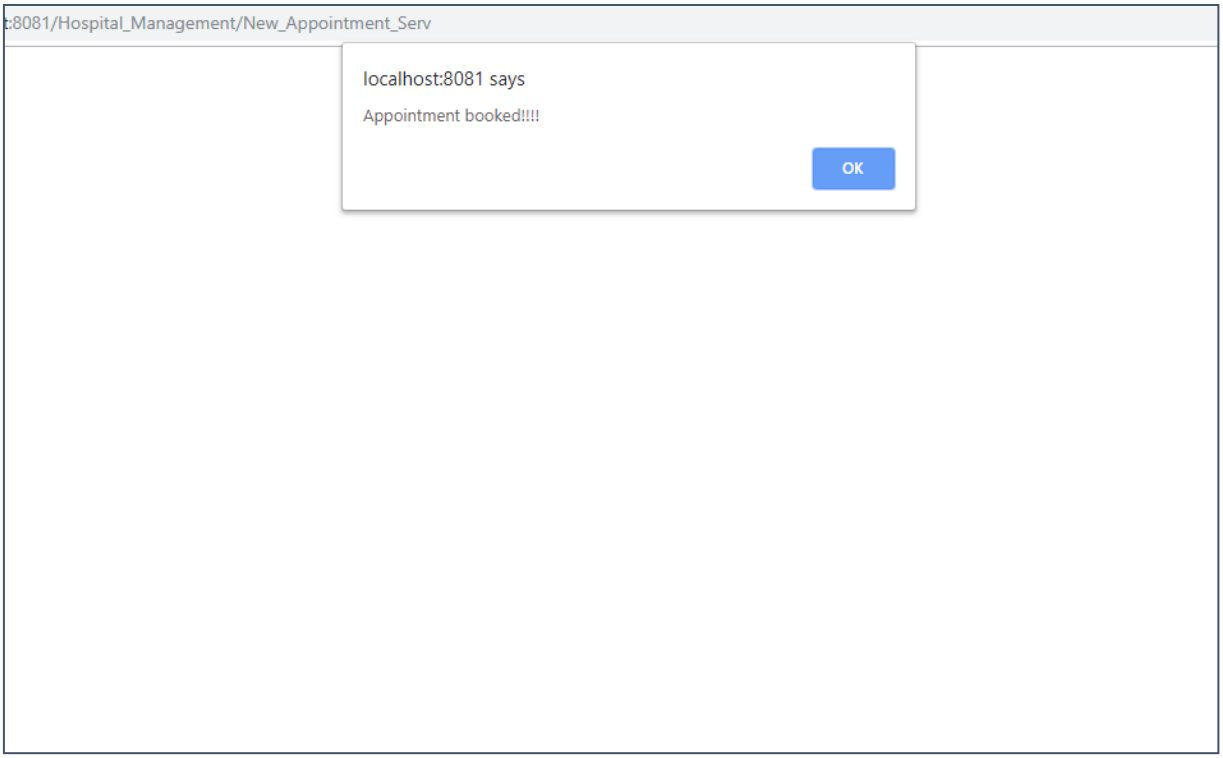
"My Profile" is the page where the user can view his/her own details.



- Get appointment

When needed an appointment from a particular doctor, the user can click on the link against the doctor whose appointment is needed.

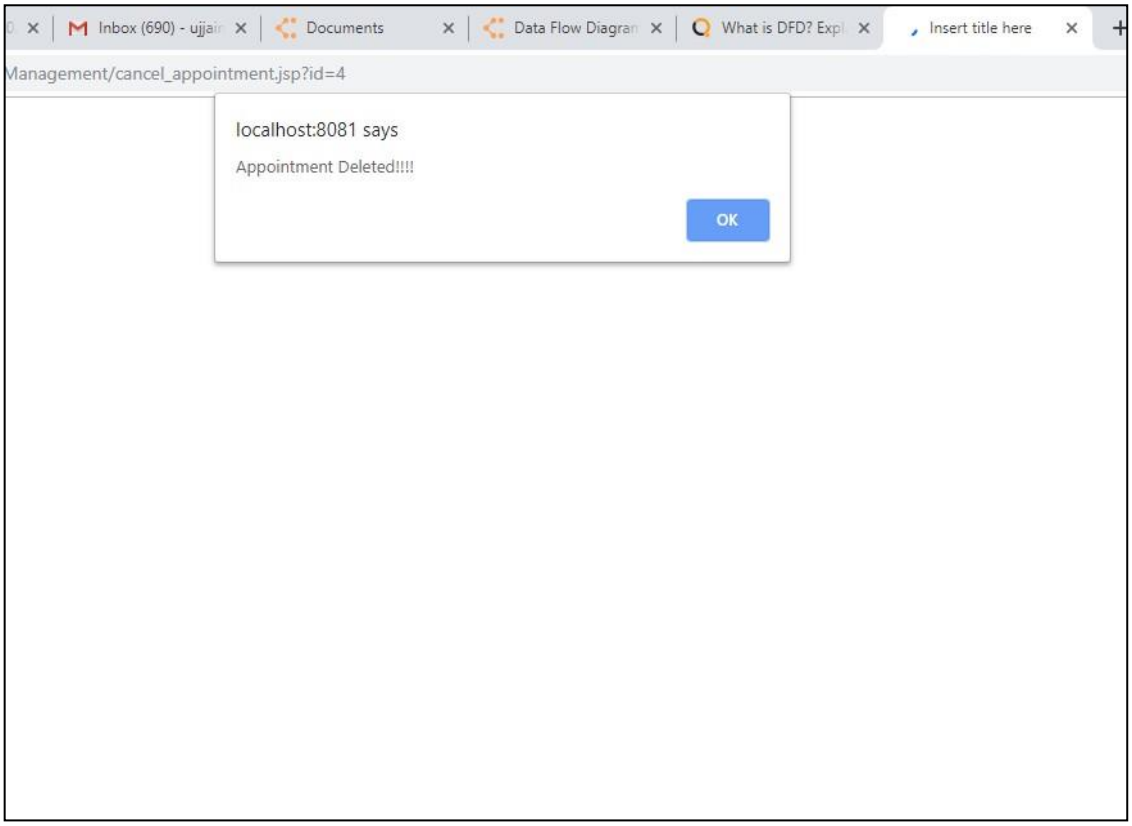




The appointment can be booked by simply giving the day and time, then the database is automatically updated.

- View appointment and delete appointment.

The appointment can be deleted by simply clicking on the link provided against the appointment.

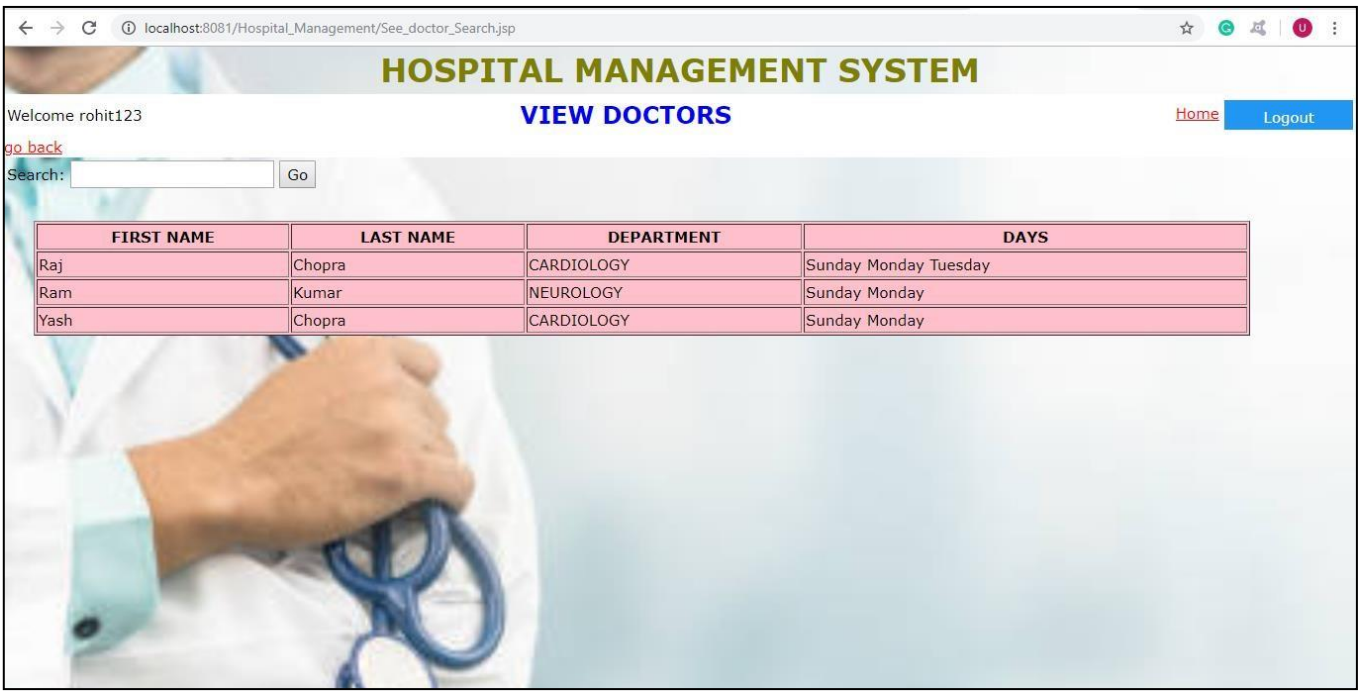


- Search for Doctor

We can view the list of all doctor and can search for a doctor by writing section of name or department in the search textbox. The searching is based on first name, last name or department.

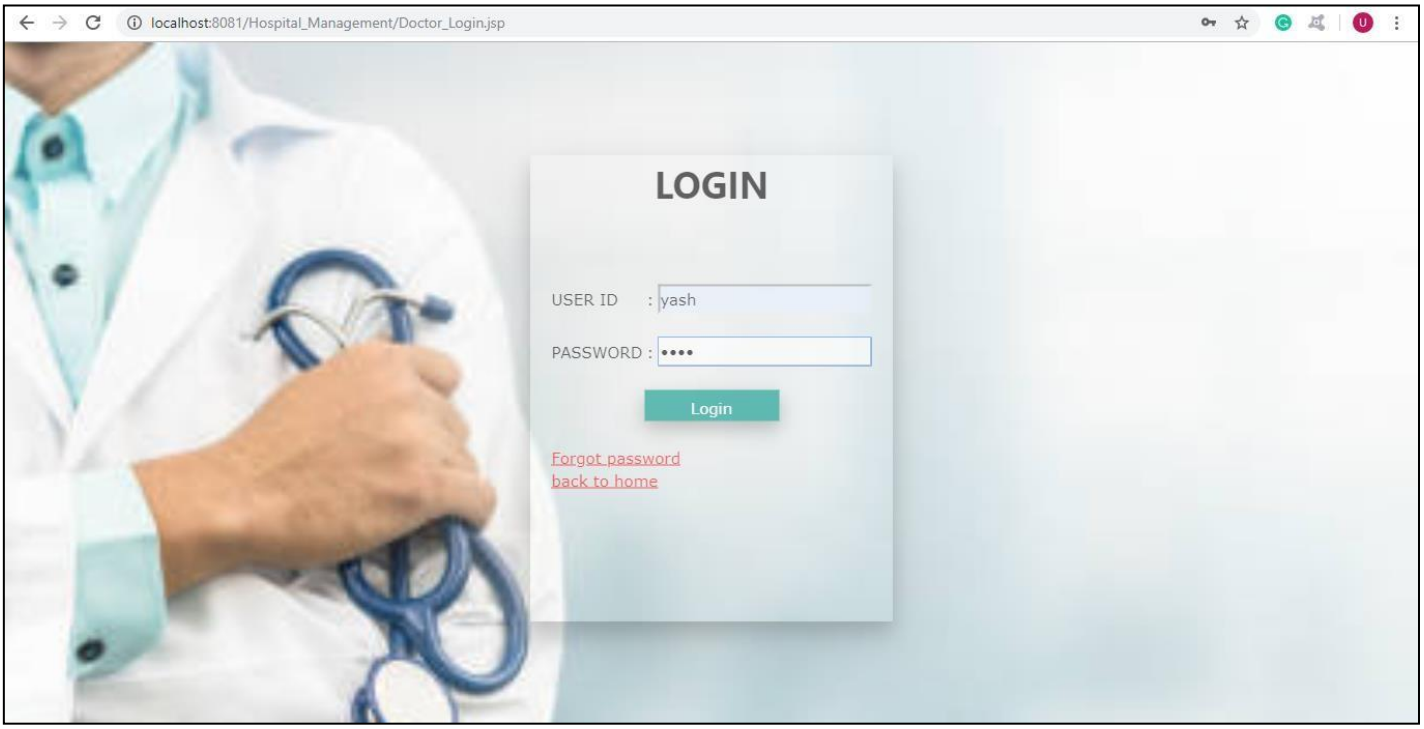
- View history and generate receipts

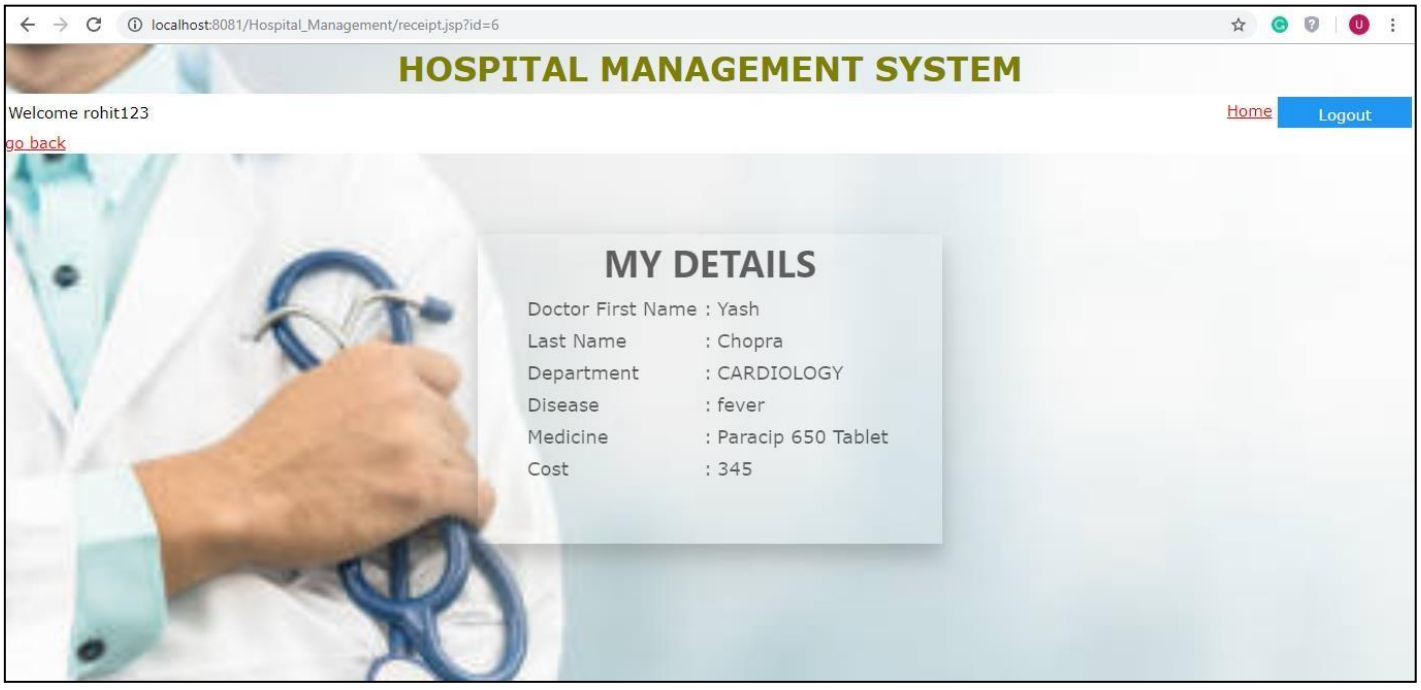
To generate receipts, we need to click on the link “receipts”.



5.2 Doctor

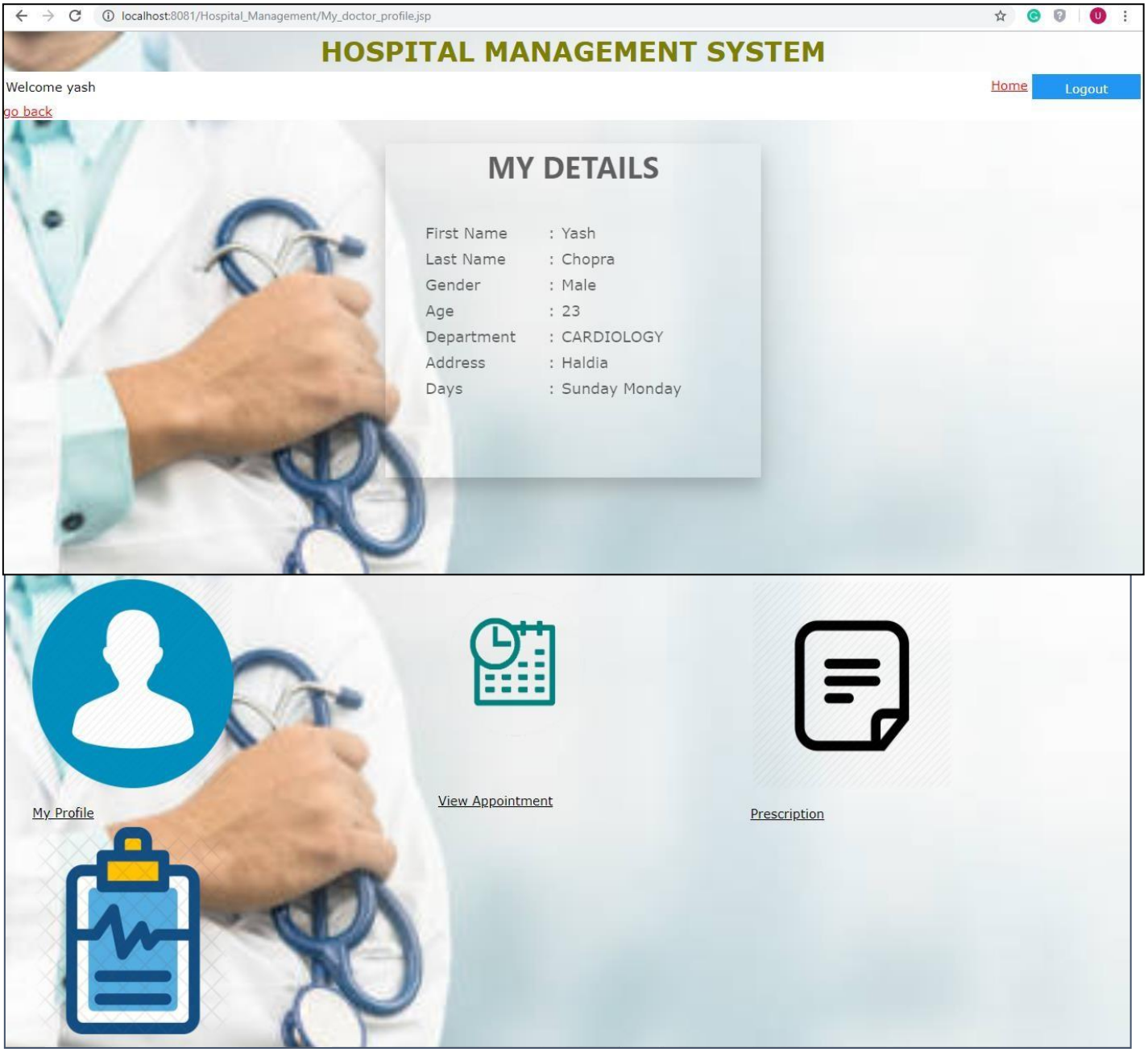
- Login





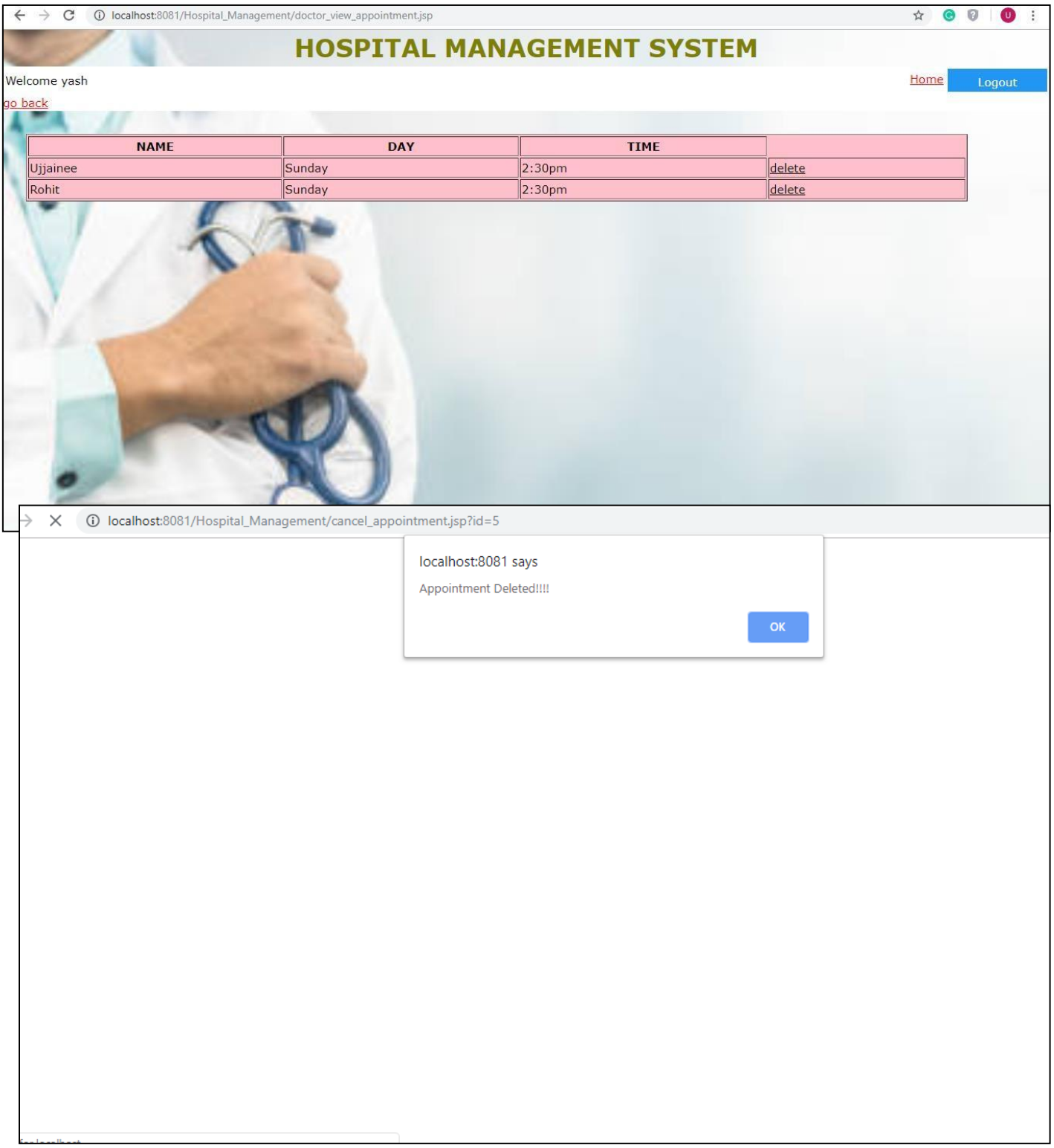
The doctor can log into his/her own account by giving username and password. If the username and password is correct, the doctor is directed to his/her account. Else, he/she is given an error message.

- My Profile



"My Profile" is the page where the user can view his/her own details.

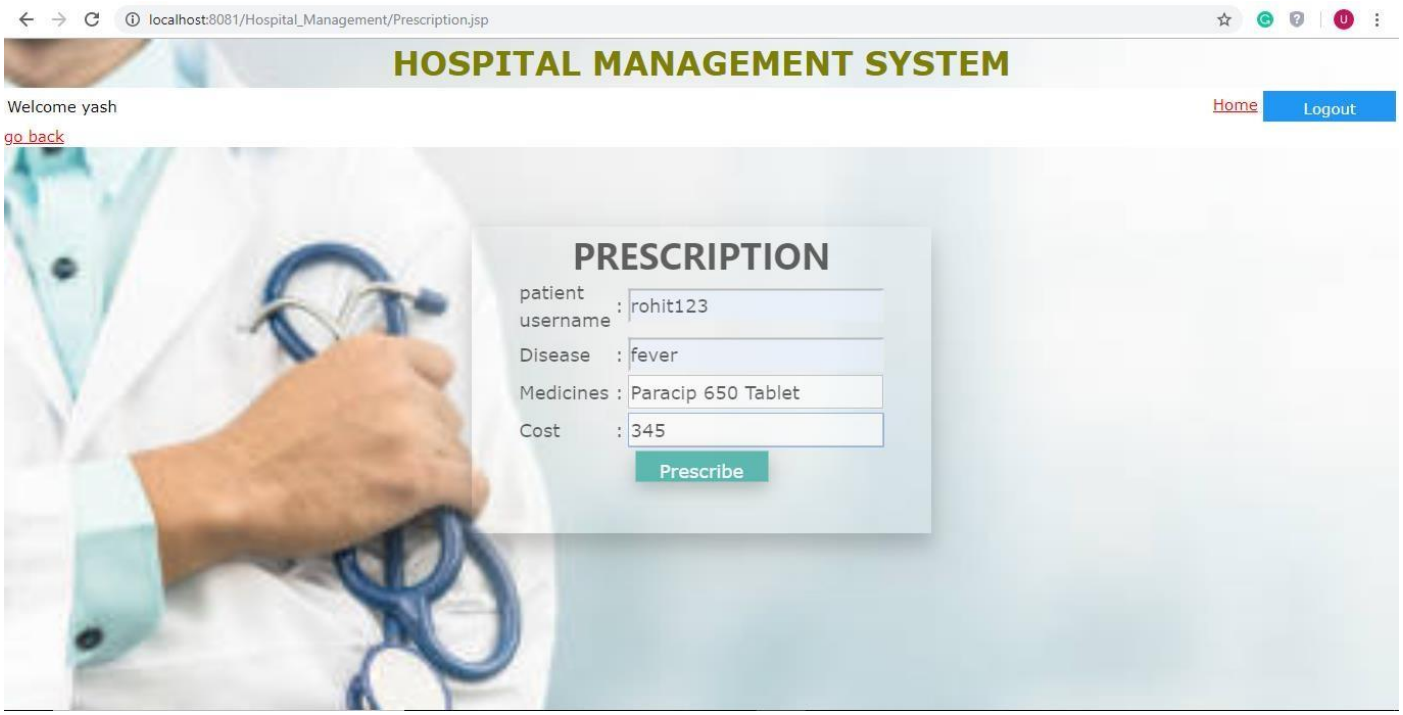
- View and delete appointment



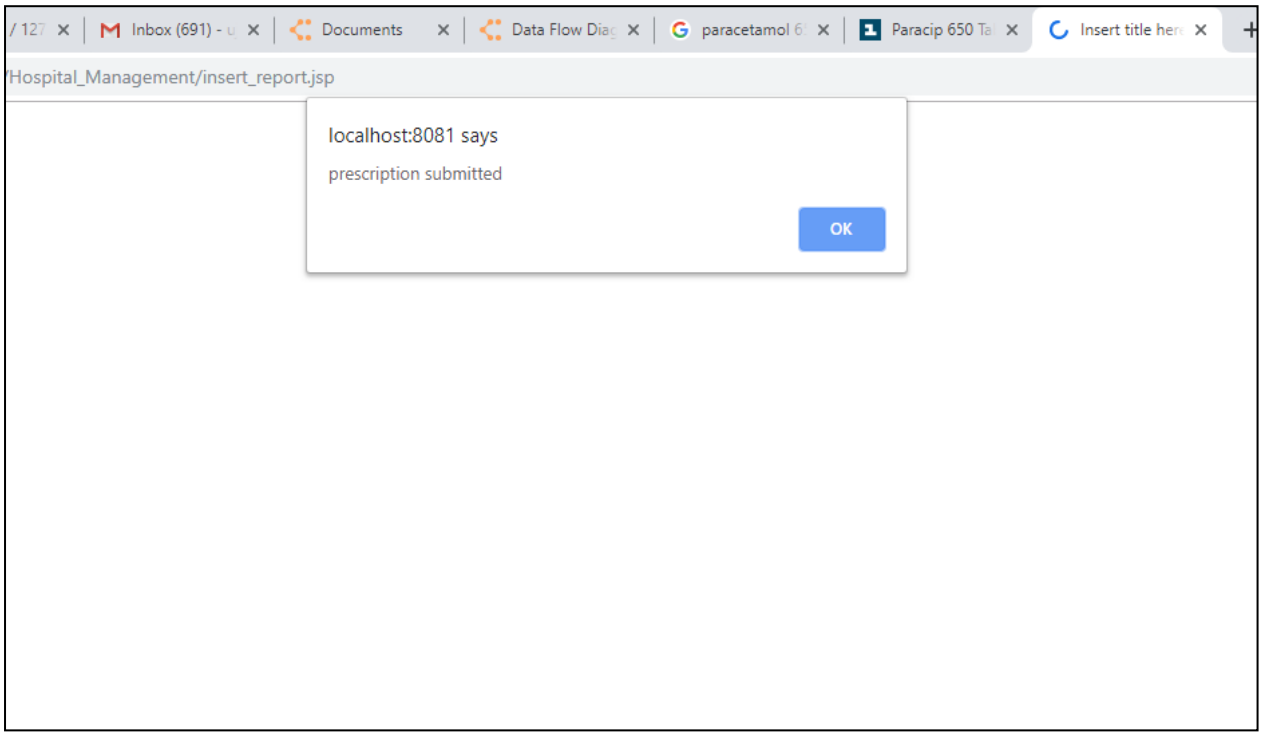
To delete an appointment, user needs to click on the link against the appointment to be deleted.

- Submit prescription

To submit a prescription for a particular patient, the doctor needs to provide the username of the patient. If the patient is present in database, then the details are submitted. Else, an error message is

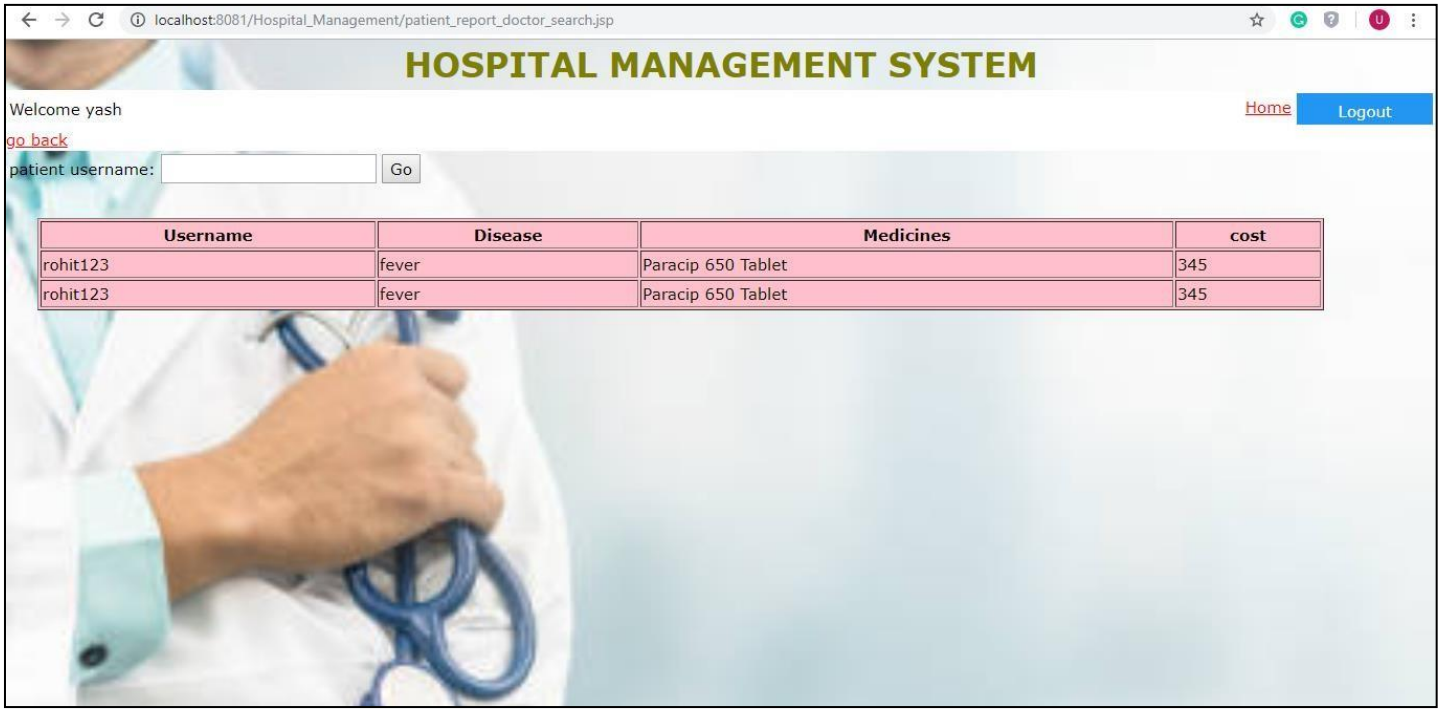


shown.



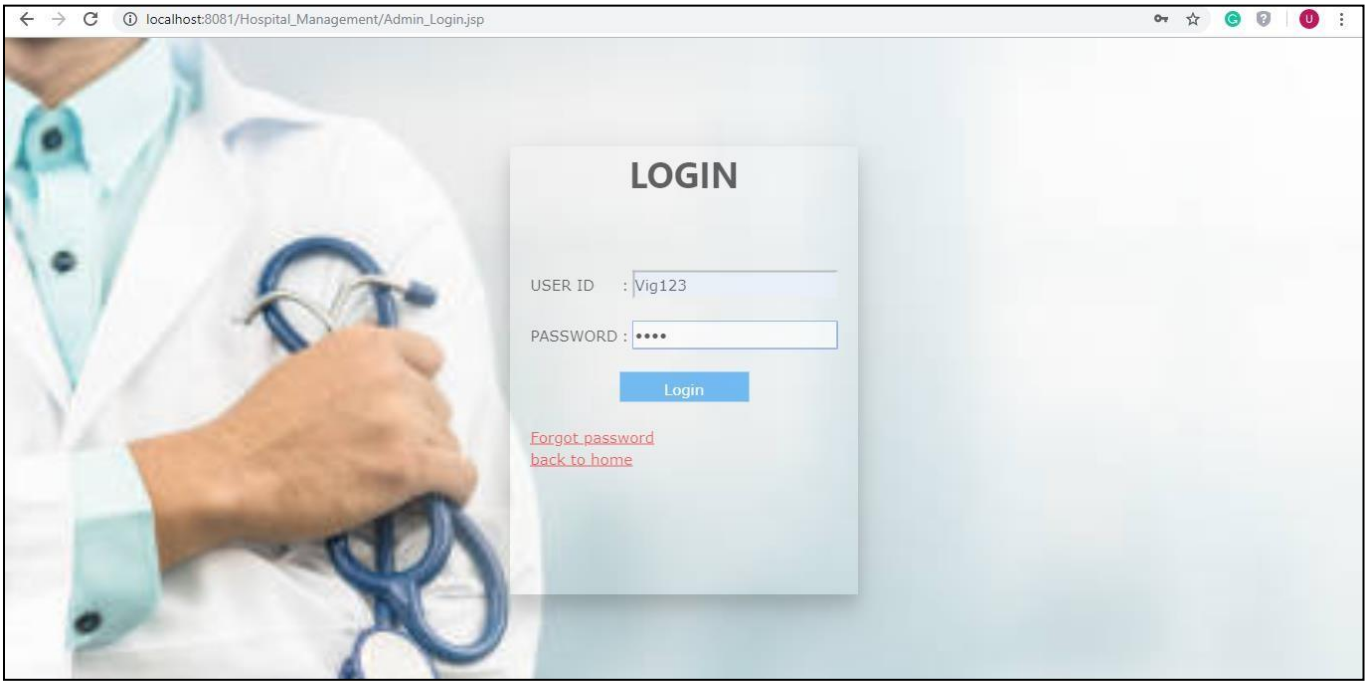
- View patient history

To view patient history, the doctor needs to simply provide the patient username.



5.3 Admin

- Login



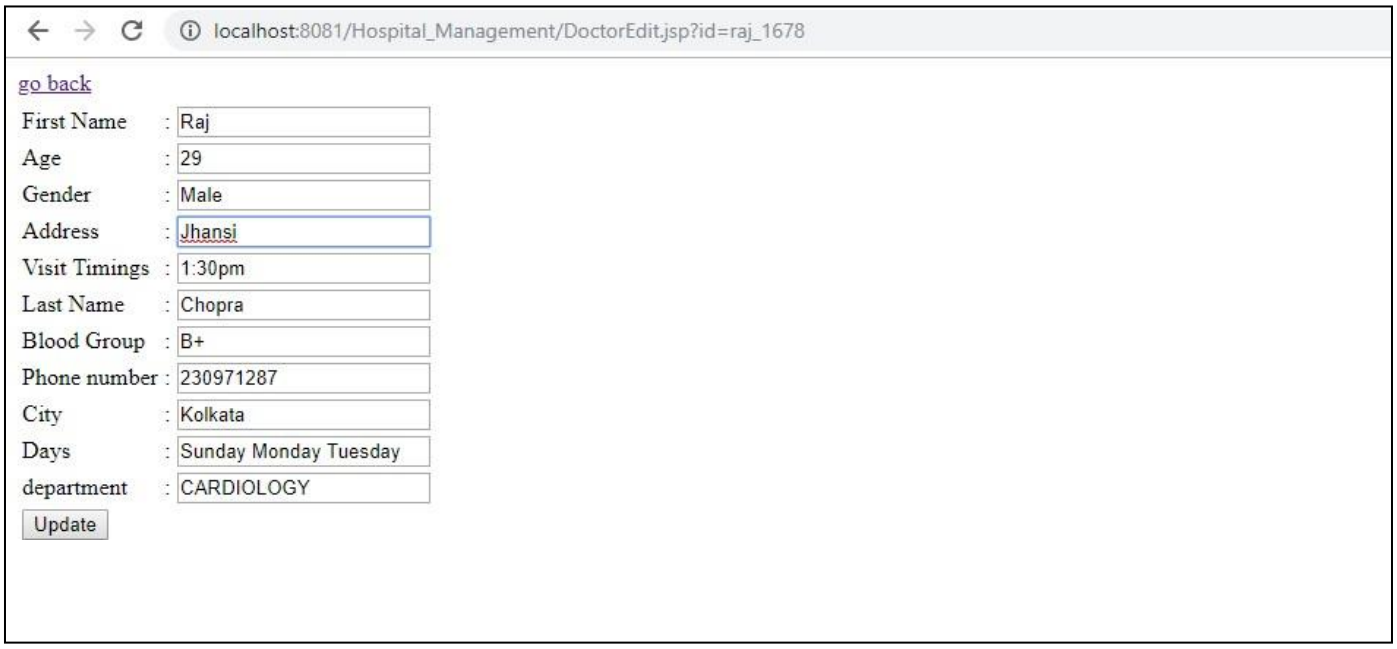
The admin can log into his/her own account by giving username and password. If the username and password is correct, the doctor is directed to his/her account. Else, he/she is given an error message.

- View, edit and delete doctor

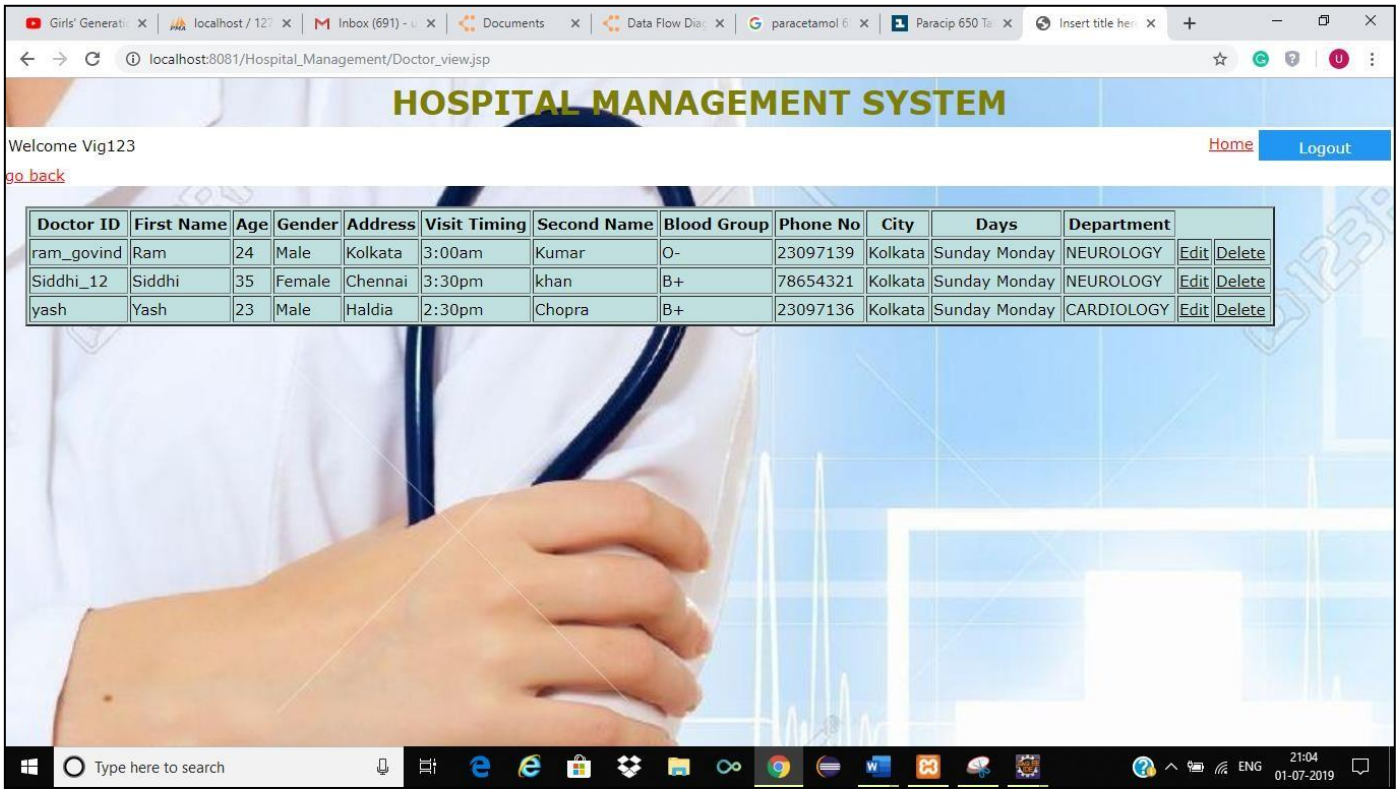
Doctor ID	First Name	Age	Gender	Address	Visit Timing	Second Name	Blood Group	Phone No	City	Days	Department		
raj_1678	Raj	29	Male	Pune	1:30pm	Chopra	B+	230971287	Kolkata	Sunday Monday Tuesday	CARDIOLOGY	Edit	Delete
ram_govind	Ram	24	Male	Kolkata	3:00am	Kumar	O-	23097139	Kolkata	Sunday Monday	NEUROLOGY	Edit	Delete
Siddhi_12	Siddhi	35	Female	Chennai	3:30pm	khan	B+	78654321	Kolkata	Sunday Monday	NEUROLOGY	Edit	Delete
yash	Yash	23	Male	Haldia	2:30pm	Chopra	B+	23097136	Kolkata	Sunday Monday	CARDIOLOGY	Edit	Delete

We can easily edit or delete the doctor details by clicking on the link against the doctor.

Edit:


localhost:8081/Hospital_Management/DoctorEdit.jsp?id=raj_1678
go back
First Name : Raj
Age : 29
Gender : Male
Address : Jhansi
Visit Timings : 1:30pm
Last Name : Chopra
Blood Group : B+
Phone number : 230971287
City : Kolkata
Days : Sunday Monday Tuesday
department : CARDIOLOGY
Update

Delete:

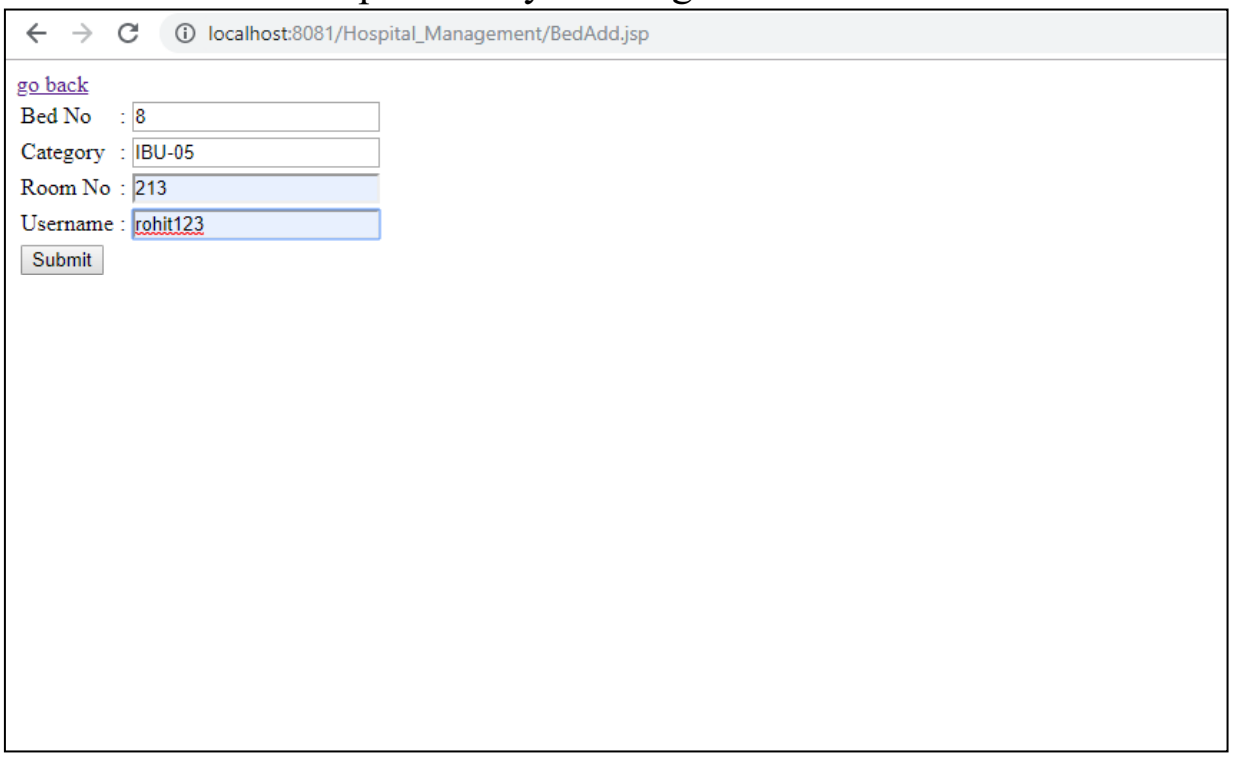

localhost:8081/Hospital_Management/Doctor_view.jsp
HOSPITAL MANAGEMENT SYSTEM
Welcome Vig123
Home
Logout
go back
Doctor ID | First Name | Age | Gender | Address | Visit Timing | Second Name | Blood Group | Phone No | City | Days | Department
ram_govind | Ram | 24 | Male | Kolkata | 3:00am | Kumar | O- | 23097139 | Kolkata | Sunday Monday | NEUROLOGY | Edit | Delete
Siddhi_12 | Siddhi | 35 | Female | Chennai | 3:30pm | khan | B+ | 78654321 | Kolkata | Sunday Monday | NEUROLOGY | Edit | Delete
yash | Yash | 23 | Male | Haldia | 2:30pm | Chopra | B+ | 23097136 | Kolkata | Sunday Monday | CARDIOLOGY | Edit | Delete
Type here to search
ENG
21:04
01-07-2019

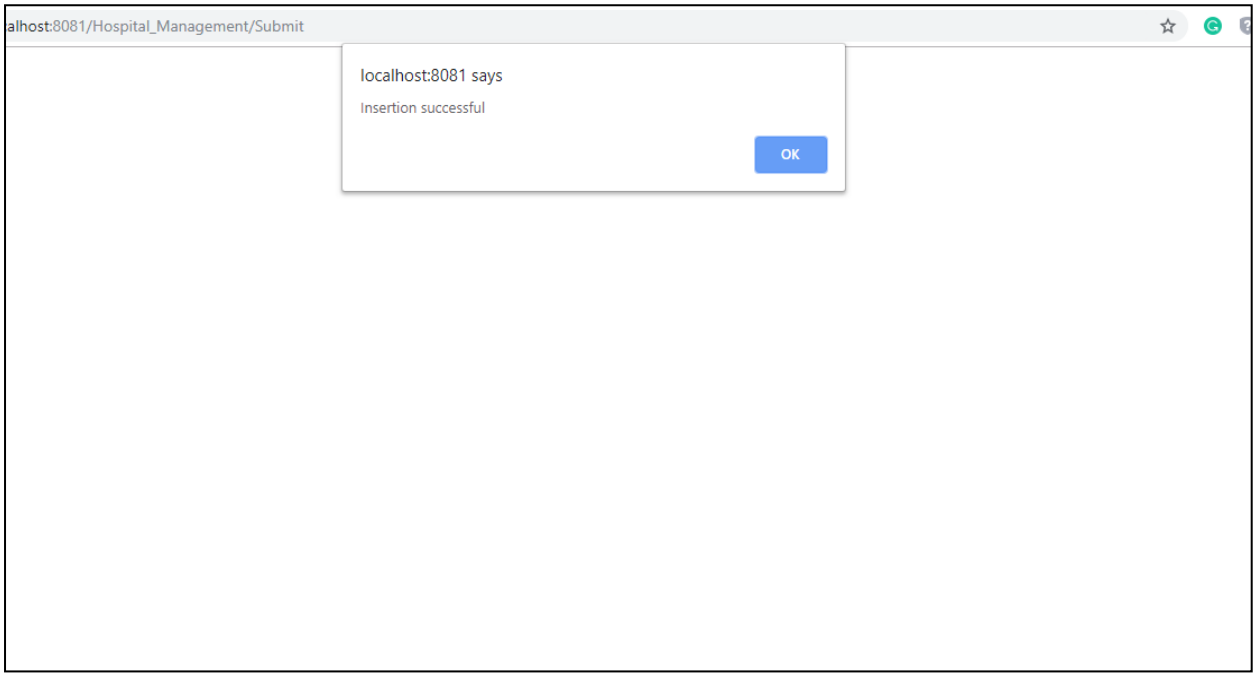
- View staff details

Similarly, as above in doctor details, we can edit and delete staff details.

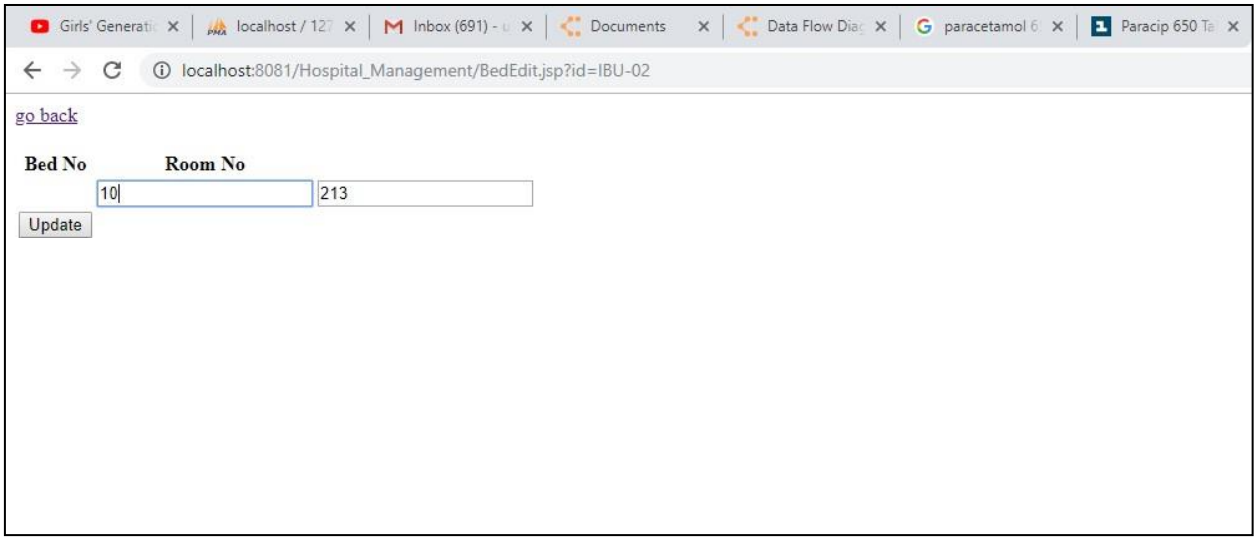
- Allot beds to patients

We can allot beds to patients by clicking on the link “add”.





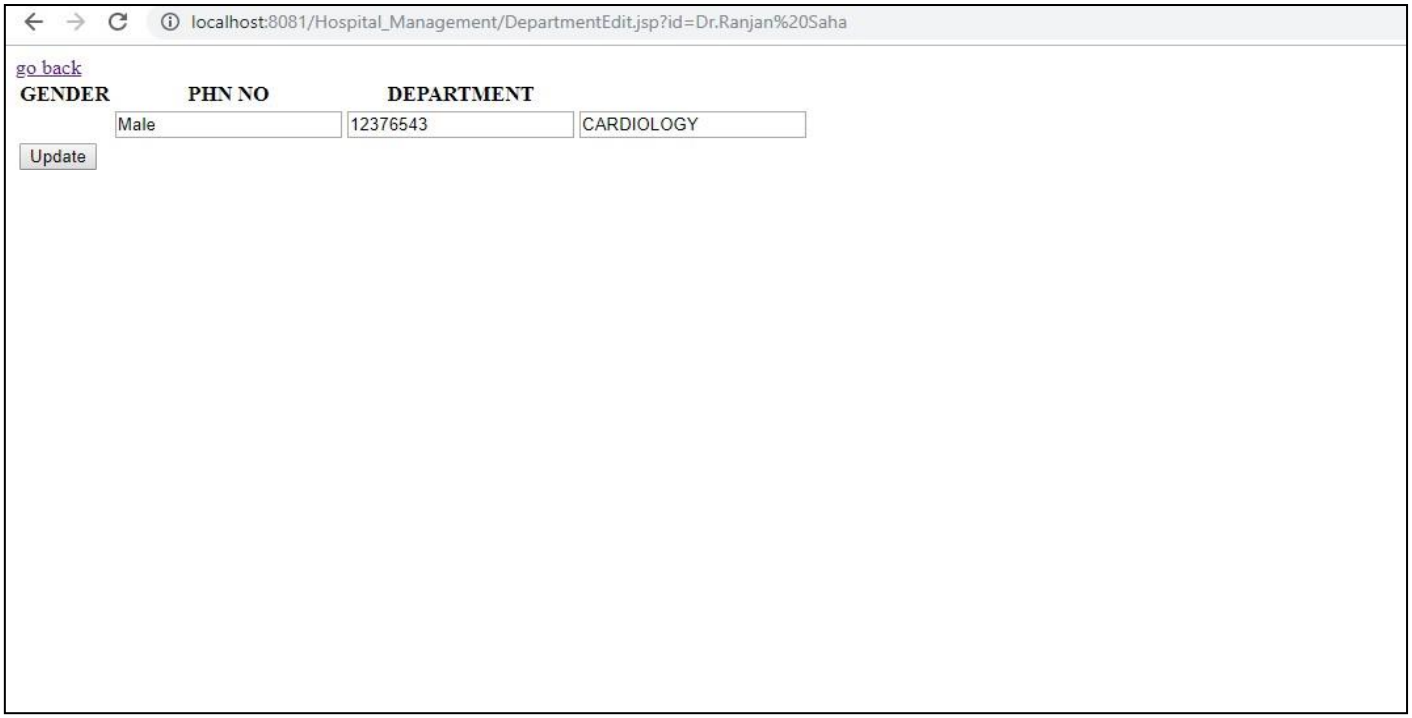
We may also edit the details of the bed allotted to a patient by simply clicking on link edit.



We can also, vacate a bed by deleting the details. It can be done by clicking on the link “delete”.

- View, edit and delete Department details

For editing a detail, we need to click on the link “edit”.



For deleting a detail, we need to click on the link “delete”.

6 Testing

- Login

• Test Case ID	Test Objective	Test Data	Expected Results	Actual Results	Test Pass/Fail
1	Log into the account	No username or password	Error message	Message to user that all fields are necessary	Pass
2	Log into the account	Wrong username	Error message	Message to the user that the username does not exist	Pass
3	Log into the account	Wrong password	Error message	Message to user that wrong password is entered	Pass
4	Log into the account	Correct combination of username and password	Allow user to log into his/her account	Redirects to the homepage	Pass

- Create new account

Test Case ID	Test Objective	Test Data	Expected Results	Actual Results	Test Pass/Fail
5	Create a new account	Any field missing	Error message	Message given to user that all fields are necessary	Pass
6	Create a new account	All fields entered by user	Create new account	Success message given to user	Pass

- Get appointment

Test Case ID	Test Objective	Test Data	Expected Results	Actual Results	Test Pass/Fail
7	Get an appointment	Time field entered as any character or an invalid time	Error message	Database updated; no error message shown	Fail

- Submit prescription

Test Case ID	Test objective	Test Data	Expected Results	Actual Results	Test Pass / Fail
8	Submit Prescription	Missing fields	Error message	Message given to user that all fields are necessary	Pass
9	Submit prescription	Invalid username of patient	Error message	Message given to user that the username does not exist	Pass

7 Future Scope

This aim was to make a software which would automate the whole process which would make work easy. The software needs to give clarity to the workers. All the relevant information should be given to the user.

In future, we would like to work so as to achieve the aim. The admin needs the controller of the whole hospital. Adding new employees, new doctors and new admin would be under the power of the admin. Accessing the work of the employees, viewing their history, calculating the annual expense of the hospital as well as the income of the hospital will be under the admin. The admin will also monitor the pharmacy.

A new department will be introduced. Pharmacy will keep track of all the medicines kept including date on which they were bought, number of medicines left in each batch and their expiry dates.

A doctor when accessing a patient will be advised about the medicine available in the hospital based on the symptoms. The doctor will also be shown which medicine will expire first.

Reusability is possible as and when require in this application. There is flexibility in all the modules.

System Scope:

Understandability: The project is very understandable and user friendly. Anyone can easily use the software without any problem

Cost-effectiveness: Its cost is under the budget and madee within a given period of given time

Maintenance: The maintenance of the system is very easy. The backend and frontend code are very understandable and easily can be modified.

8 Conclusion

The "Hospital Management System" aims to automate the whole tedious process. This will make everyones work easier. This makes storage and representation of data very efficient. This ensures that the data is not inconsistent. Data is very efficiently stored such that every piece of information is in its place and can be accessed when needed.

This ensures that the doctor can view the whole patient history which can give him/her a better view of which medicine has been prescribed to the patient at which point of time. The doctor in this way finds his job much easier. He/She can easily access the whole situation much better and more efficiently work onthe patient.

The admin also from a particular place can get all the information without any mess. Also the patient can get an appointment from their home.

This whole process decreases the paper work and makes it efficient.

9 References

https://www.w3schools.com/